

REMARKS

Claims 1-47 are pending in the present application. Claims 1-3 and 16 have been rejected under § 103 as being unpatentable over Bell (US 5,642,075) (Bell). Claims 1-14, 16-27, and 38-47 have been rejected under § 103 as being unpatentable over Lee (US 2003/0152056) (Lee) in view of Lin (US 2004/0038701) (Lin). Claims 15 and 28 have been rejected under § 103 as being unpatentable over Lee in view of Lin, and further in view of Yu et al. (US 5,365,190) (Yu). Claims 29-37 have been rejected under § 103 as being unpatentable over Lee in view of Lin, and further in view of Gunzelmann et al (US 2004/0097250).

Amended claim 1 recites a RF apparatus formed using an integrated circuit including "power amplifier circuitry formed using the integrated circuit, wherein the integrated circuit includes a digital interface for providing an interface between the power amplifier circuitry and an external controller," and "circuitry for generating a power ramp profile to control the output power of the RF power amplifier."

Bell discloses an amplifier circuit using an automatic gain control (AGC). Bell does not teach or suggest an RF apparatus as recited in amended claim 1. For example, Bell does not teach or suggest "a digital interface for providing an interface between the power amplifier circuitry and an external controller."

Lee discloses a wireless local area network (WLAN) transceiving integrated circuit (IC), including a WLAN interface, an input buffer and controller, and a processor. An IC of Lee (e.g., IC 350 of FIG. 3B) includes a power amplifier 352, core components 351, and serial and parallel interfaces 320 and 324 to interface with a host 322. An IC of Lee (e.g., IC 400 of FIG. 4A) may include a baseband 404. Lee does not teach or suggest, however, an integrated circuit with a digital interface for providing an interface between the power amplifier circuitry and an external

controller. The interface between the power amplifier 352 and the core components 351 (FIG. 3B) appears to include an transmit signal TX and an analog power control signal TX_PC. The interfaces 320 and 324 (FIG. 3B) do not provide an interface between the power amplifier 352 and an external controller.

Lin discloses a wireless transmission apparatus used for transmitting an RF signal. Like Lee, Lin also does not teach or suggest an integrated circuit with a digital interface for providing an interface between the power amplifier circuitry and an external controller. The power amplifier 118 receives an RF input signal R118 and an analog control signal from the power control loop 116.

For at least these reasons, applicant asserts that amended claim 1 is allowable over the prior art. Since dependent claims 2-17 depend from amended claim 1, it is also believed that these claims are allowable over the prior art.

Amended claim 18 recites a method of amplifying RF signals including "providing an RF power amplifier formed on an integrated circuit," "storing a plurality of ramp profiles in the integrated circuit, " "receiving control signals from a controller that is external to the integrated circuit, wherein the control signals are received over a digital interface," and "selecting one of the ramp profiles to control the output power of the RF power amplifier."

For at least the reasons set forth above with respect to amended claim 1, applicant asserts that amended claim 18 is allowable over the prior art. Since dependent claims 19-28 depend from amended claim 18, it is also believed that these claims are allowable over the prior art.

Amended claim 38 recites an RF power amplifier module including "power amplifier circuitry formed using a first integrated circuit," "control circuitry formed using a second integrated circuit," "a digital interface formed using the first integrated circuit, wherein the digital

interface is configured to allow digital signals from an external controller to be received by the power amplifier circuitry," and "memory formed using one of the first and second integrated circuits, wherein a plurality of ramp profiles for controlling the output power of the power amplifier circuitry are stored in the memory."

For at least the reasons set forth above with respect to amended claim 1, applicant asserts that amended claim 38 is allowable over the prior art. Since dependent claims 39-47 depend from amended claim 38, it is also believed that these claims are allowable over the prior art.

Amended claim 38 recites a method of controlling a wireless communication device including "providing a baseband controller," "providing an integrated circuit having an RF power amplifier, memory, a digital interface, and an RF input, all formed using the integrated circuit," "storing a plurality of ramp profiles in the memory formed using the integrated circuit," "sending a power control signal from the baseband controller to the integrated circuit using the digital interface," selecting one of the plurality of ramp profiles based on the power control signal received from the baseband controller," and "using the selected ramp profile to control the output power of the RF power amplifier."

As mentioned above claim 29 has been rejected under § 103 as being unpatentable over Lee in view of Lin , and further in view of Gunzelmann. Lee and Lin are discussed above. Gunzelmann discloses a transmission configuration for a mobile radio communication system. Gunzelmann shows an interface 2 that includes conductors 21, 22, 23, and 24. Conductor 21 carries a digital signal and is designed for transmission of the payload data which is provided from a digital signal processor. The module 3 (including the power amplifier 31) of Gunzelmann does not appear to receive a an analog RF input signal to be amplified, but rather appears to receive a digital signal, which is converted into a signal to be amplified.

For at least these reasons, and for reasons set forth above with respect to amended claim 1, applicant asserts that amended claim 29 is allowable over the prior art. Since dependent claims 39-47 depend from amended claim 29, it is also believed that these claims are allowable over the prior art.

It is respectfully submitted that all claims are patentable over the prior art. It is further more respectfully submitted that all other matters have been addressed and remedied and that the application is in form for allowance. Should there remain unresolved issues that require adverse action, it is respectfully requested that the Examiner telephone Bruce A. Johnson, Applicants' Attorney at 512-301-9900 so that such issues may be resolved as expeditiously as possible. Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 to deposit account number 50-3864 (Johnson & Associates).

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Date

Respectfully Submitted,



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